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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,829	10/17/2003	Hideo Nagai	82478-1400	2380

21611 7590 03/17/2006

SNELL & WILMER LLP  
600 ANTON BOULEVARD  
SUITE 1400  
COSTA MESA, CA 92626

EXAMINER
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LEE, Y MY QUACH

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/688,829

Applicant(s)

NAGAI ET AL.

Examiner

Lee Y Quach

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12/12/05 & 12/29/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4, 6-8, 10 and 14-20 is/are allowed.
- 6) ☒ Claim(s) 11-13 is/are rejected.
- 7) ☒ Claim(s) 5 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/12/05</u> . | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2875

***DETAILED ACTION***

***Response to Arguments***

1. Applicant's arguments filed December 12, 2005, with respect to the rejection of claims 1 to 4, 6 to 8 and 10 to 12 have been fully considered and are persuasive because the primary reference of Huang has an effective prior art date of March 31, 2003 which is subsequent to the effective filing date of applicant's priority document of October 17, 2002. A certified English translation of the priority document was filed on December 29, 2005. Therefore, the rejection of claims 1 to 4, 6 to 8 and 10 has been withdrawn. However, upon further consideration, a new ground of rejection is made in view of the reference to Murata. Rejection of claims 11 and 12 as well as newly submitted claim 13 based on the reference follows.

***Claim Objections***

2. Claims 5 and 9 are objected to because of the following formalities: Claim 5 is identical to claim 14, and claim 9 is identical to claim 18. Claims 5 and 9 need to be cancelled. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11 to 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murata in view of Zou et al. (prior art previously cited) and Robertson (prior art previously cited).

Murata discloses a substrate (12), an insulation film (13) that covers a main surface of the substrate, a wiring pattern (15) provided on the insulation film, an array of light emission chips such as resonant light emitting diodes (2) that are mounted above the insulation film, is connected to the wiring pattern to emit light having a wavelength, and a light reflective layer (14, 17) above the insulation film and surrounding the light emitting surfaces of the light emission chips. However, Murata does not disclose that the wavelength emitted by the light emission chips is in ultra violet range, a phosphor layer operatively positioned relative to the light

Art Unit: 2875

emission chips to response to the wavelength range to emit a white light, and the reflective layer is made of particles of metal oxide.

Robertson et al. teach the light emission chips (106a-106m) emitting light having a wavelength in the ultra violet range (column 2, line 29, column 3, lines 19 to 20) and operatively positioned relative to a phosphor layer (102 column 2, lines 34 to 35, column 3, line 1) on the light emitting face to emit white light (column 1, lines 32 to 36).

Zou et al. teach that it is known in the lighting art to use a reflective layer made of particles of metal oxide (aluminum oxide, zinc oxide, column 7, line 41) for optimizing the output radiation and light efficiency. Note that Zou et al. teach that the optimum size of the particle can be much finer and may be predicted from the relation as shown on lines 48 to 57 of column 7, the average particle diameter of 0.5  $\mu\text{m}$  or below as claimed in claim 12 would naturally and obviously be made based on the relation as taught.

It would have been obvious to one skilled in the art to provide the light emission chips of Murata with the ultra violet wavelength light emission chips operatively positioned relative to a phosphor layer on the light emitting face, as shown by Robertson, for providing satisfactory white light upon the phosphorous layer.

It would have been obvious to one skilled in the art to make the reflective layer of Murata with the particles of metal oxide having the average size thereof, as shown by Zou et al., for optimizing the output radiation and light efficiency.

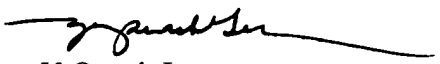
5. Claims 1 to 4, 6 to 8, 10 and 14 to 20 are allowed.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Y Quach Lee whose telephone number is 571-272-2373. The examiner can normally be reached on Tuesday and Thursday from 8:30 am to 4:30 pm.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service whose telephone number is 571-272-2815.

Y.Q.  
March 9, 2006

  
Y Quach Lee  
Primary Examiner  
Art Unit 2875